Claims:

1. A recombinant hG-CSF-L-vFc fusion protein comprising hG-CSF, a peptide linker, and a human IgG Fc variant, wherein the human IgG Fc variant comprises a hinge, CH2, and CH3 domains of human IgG4 with Ser228Pro and Leu235Ala mutations mutation as SEQ ID NO 20.

2. The recombinant hG-CSF-L-vFc fusion protein of claim 1, wherein the peptide linker (i) comprises about 20 or fewer amino acids; (ii) is present between hG-CSF and the human IgG Fc variant; and (iii) comprises two or more amino acids selected from the group consisting of glycine, serine, alanine, and threonine.

3. The recombinant hG-CSF-L-vFc fusion protein of claim 1, wherein the hG-CSF-L-vFc fusion protein is characterized by an enhanced *in vitro* biological activity of at least 2 fold relative to that of rhG-CSF on a molar basis.

4. A CHO-derived cell line producing the hG-CSF-L-vFc fusion protein of claim 1 in the cell line's growth medium in excess of 10 μg per million cells in a 24 hour period.

5. The CHO-derived cell line producing the hG-CSF-L-vFc fusion protein of claim 4 in the cell line's growth medium in excess of 30 μg per million cells in a 24 hour period.

6. A method for making a recombinant fusion protein comprising hG-CSF, a flexible peptide linker, and a human IgG Fc variant, which method comprises: (a) generating a CHO-derived cell line by transforming the CHO cell line with a gene encoding the recombinant fusion protein comprising hG-CSF; (b) growing the cell line under conditions sufficient for expressing the recombinant fusion protein in ~~its~~ the cell line's growth medium at a rate of in excess of 10 μg per million cells in a 24 hour period; and (c) purifying the expressed protein from step (b), wherein the recombinant fusion protein is characterized by an enhanced *in vitro* biological activity of at least 2 fold relative to that of rhG-CSF on a molar

basis; and wherein the human IgG Fc variant comprises a hinge, CH2, and CH3 domains of human IgG4 with Ser228Pro and Leu235Ala mutations mutation as SEQ ID NO 20.

7. The method of claim 6, wherein in step (b) growing the cell line under conditions sufficient for expressing the recombinant fusion protein in the cell line's growth medium at a rate of in excess of 30 μg per million cells in a 24 hour period.

8. The method of claim 6, wherein the flexible peptide linker (i) comprises about 20 or fewer amino acids; (ii) is present between hG-CSF and the human IgG Fc variant; and (iii) comprises two or more amino acids selected from the group consisting of glycine, serine, alanine, and threonine.

9. The method of claim 8, wherein in step (b) growing the cell line under conditions sufficient for expressing the recombinant fusion protein in the cell line's growth medium at a rate of in excess of 30 μg per million cells in a 24 hour period.

10. A method for making a recombinant fusion protein comprising hG-CSF, a flexible peptide linker, and a human IgG Fc variant, which method comprises: (a) generating a CHO-derived cell line by transforming the CHO cell line with a gene encoding the recombinant fusion protein comprising hG-CSF; (b) growing the cell line under conditions sufficient for expressing the recombinant protein in the cell line's growth medium at rate of in excess of 10 μg per million cells in a 24 hour period; and (c) purifying the expressed protein from step (b), wherein the recombinant fusion protein is characterized by an enhanced *in vitro* biological activity of at least 2 fold relative to that of rhG-CSF on a molar basis; wherein the flexible peptide linker (i) comprises about 20 or fewer amino acids; (ii) is present between hG-CSF and the human IgG Fc variant; and (iii) comprises two or more amino acids selected from the group consisting of glycine, serine, alanine, and threonine; and wherein the human IgG Fc variant comprises a hinge, CH2, and CH3 domains selected from the group consisting of human IgG4 with Ser228Pro and Leu235Ala mutations as SEQ ID NO 20.

11. The method of claim 10, wherein in step (b) growing the cell line under conditions sufficient for expressing the recombinant fusion protein in the cell line's growth medium at a rate of in excess of 30 μg per million cells in a 24 hour period.